

## **EPIDURAL NERVE BLOCKS AND EPIDURAL STEROID INJECTIONS IN THE MANAGEMENT OF LOWER EXTREMITY PAIN**

### EPIDURAL INJECTIONS

#### A. Background

Epidural injections of local anesthetic and/or steroid may be considered for the treatment of radicular pain symptoms secondary to disk herniation or postsurgical radicular pain. Epidural injections do not alter the course of the underlying process, but may offer effective pain relief in selected patients. Epidural injections may be performed in the cervical, thoracic, lumbar, and sacral regions. In patients with distorted anatomy due to surgery or pathology, fluoroscopic guidance may be necessary to insure proper delivery of the drug to the target area. The injections should be delivered into the area of the known pathology using midline, paravertebral, or transforaminal approaches. Caudal steroid injections should only be used for patients with leg pain of sacral origin, or in whom direct access to the lumbar regions is impossible.

Local anesthetic epidural blockade may be useful in conjunction with aggressive physical therapy or manipulation of a painful limb associated with joint stiffness or limited range of motion. Lumbar sympathetic blocks are more appropriate for evaluating and treating complex regional pain syndromes, as they provide a more selective evaluation by providing a discrete sympathetic block.

#### B. Diagnostic Criteria

##### 1. Pertinent History and Physical Findings

Pain in the lower extremities associated with injury to the lumbar or sacral area, most commonly following failed post-operative disk surgery.

## 2. Appropriate Diagnostic Tests and Examinations

Neurological examination of the lower extremities may or may not be abnormal. Appropriate testing of the lumbosacral area, either by non-invasive techniques such as CT scan, MRI scan, EMG, or invasive myelography.

## C. Treatment

### 1. Outpatient Treatment

These are carried out as an outpatient, in an ambulatory patient setting. Patients are often positioned in the seated, lateral, or prone positions. If local anesthetics are introduced into the epidural space, proper monitoring of the patients vital signs is needed, to include electrocardiography, blood pressure measurement, and pulse oximetry. Conscious sedation may be employed but is seldom needed for most patients. Equipment for the management of inadvertent intravascular injections causing toxicity must be immediately available. Emergency equipment and supplies include oxygen, ventilatory tools, laryngoscope, endotracheal tubes, intravenous access supplies, and vasopressors. Most patients receiving epidural local anesthetics will encounter a decline in blood pressure and occasionally bradycardia. Vasopressors such as ephedrine and phenylephrine should be available, in addition, atropine should be immediately available.

### 2. Toxicity

Local anesthetic toxicity can be avoided by injecting small volumes of anesthetic into the epidural space and frequent aspiration of the needle to assess for intravascular placement of the needle. Test dose injections using a small dose of local anesthetic and epinephrine are helpful to assess intravascular injection or inadvertent subarachnoid injection. Cardiovascular and ventilatory support may be needed even with test dose injections, and all appropriate precautions must be taken. Steroid injections in the

absence of epidural local anesthetic do not require hemodynamic monitoring. Post injection monitoring of vital signs are required for at least one hour following epidural local anesthetic injections, and possibly longer.

### 3. Duration of Treatment

Epidural injections are primarily intended as a short-term pain intervention for the initial radicular pain problem. Using a long-acting steroid preparation, such as methylprednisolone acetate or triamcinolone hexacetonide, injections should not be performed at intervals shorter than two weeks, but preferably at one month intervals. Steroid injections should not exceed three in a six month time frame, and not more than four in a twelve month period.

#### Protocol History:

Originally "Caudal Epidural Blocks . . . "

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